

Brake EV 028 on a gearbox. (Image: RINGSPANN)



The monitoring of RINGSPANN's electric brakes records the state inquiries. (Image: RINGSPANN)

High clamping forces in a compact format

RINGSPANN extends its selection of electrical disc brakes for industry

The trend is clear to see: more and more machine and plant engineers are turning towards electric brakes when implementing rotary drive units. The manufacturer RINGSPANN has responded to this development and extended its range of compact and light electric disc brakes with clamping forces of up to 24 kN. They are suitable for use as holding or emergency stop systems in many industrial applications. Not least thanks to their extremely low power consumption during the holding phase, the RINGSPANN brakes are also recommended as particularly energy-efficient slow-down solutions.

The latest generation of electrical industrial brakes from RINGSPANN represents an extremely economical slow-down solution for all machine and plant engineers who shy away from the high installation and maintenance costs of hydraulic and pneumatic brake systems. For the electronically adjustable disc brakes do not just have compact installation dimensions and a small weight, but also stand out for their high functionality and energy efficiency. "Not only the design engineers of drive and rotating units benefit, but ultimately the users and operators of the plants", says Franz Eisele, head of division brakes and couplings at RINGSPANN. Typical areas of application for the electrical brakes of RINGSPANN's EV and EH series are for example the turbine, fan and ventilator industry, machine tool manufacture, winding technology, the wind power industry as well as general drive technology.

Four sizes with an efficiency advantage

In order to meet industrial users' increasing need for compact and light e-brakes with even greater success, RINGSPANN added a further series to its range of electrical disc brakes for supply voltages from 230 to 415 VAC (50/60 Hz) a few weeks ago. Meaning the company can now provide 16 basic types of modern electrical brakes in four frame sizes with clamping forces from 1.8 to 24 kN, which are very versatile as both holding and emergency stop systems. Franz Eisele refers to a remarkable technical feature which all RINGSPANN brakes of

the series EV and EH have in common: "Our electrical brakes get by with an extremely low power consumption during the entire holding phase; just 10 Watts are required for the small sizes", points out the divisional manager. With this excellent value, the manufacturer from Bad Homburg sets standards internationally and at the same time makes an innovative contribution to the implementation of energy-efficient drive solutions.

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The design advantages of the electric disc brakes by RINGSPANN

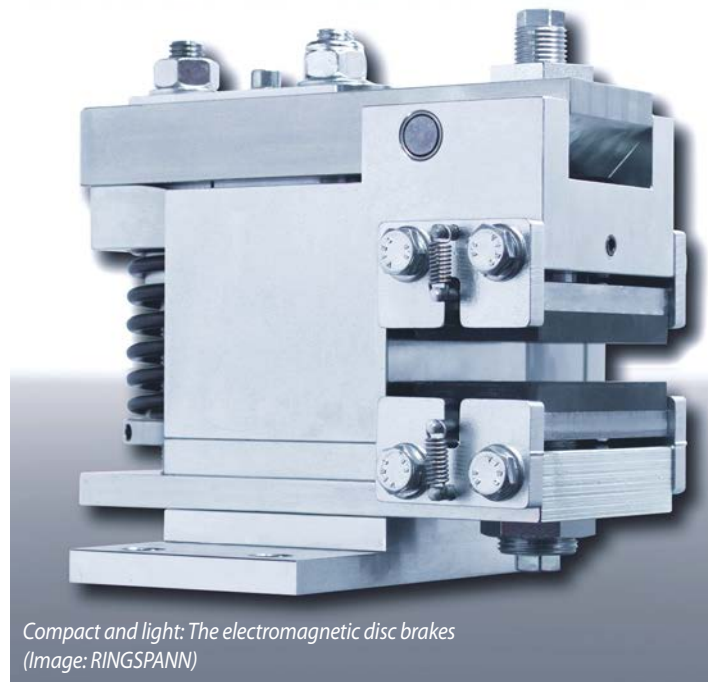
- Compact design makes space-saving installation possible
- No self-strengthening effect and high torque consistency
- Optimal heat dissipation thanks to open method of construction
- Low power requirement
- Highly wear-resistant friction materials and large braking surfaces lower the required maintenance
- Simple exchange of friction blocks without having to disassemble the brake

Large leeway for design engineers

Many design engineers in plant and machine construction ought to be equally pleased to hear that RINGSPANN's electrical "brake calipers" can generally be used for the implementation of both active and passive brake concepts, since they are available in a spring-activated/electromagnetically released execution as well as in an electromagnetically activated/spring-released version. Moreover, depending on the geometry of the driving or driven unit, they can be attached parallel or perpendicular to the brake disc. What can also be performed without any problems is a variable adjustment to brake discs with thicknesses of 8 to 30 mm. "This offers huge freedom in design engineering; especially if it turns out that prematurely or freely defining the brake disc thickness is not possible," explains divisional manager Eisele. There are further design advantages thanks to the compact design of the RINGSPANN brakes and their small dead weights (6.5 to 50 kg): both aspects are a huge advantage for the quite simple implementation of applications where the brake is an integrated part of a moved unit.

Sensor technology and Industry 4.0

RINGSPANN engineers have not only thought of the design engineers in the development of their electrical brakes, but also of the plant operators later on. For example, the braking torque (i.e. the clamping force) can be adapted very simply and accurately to the specific application by means of an adjusting nut. Worn friction blocks can be exchanged in a few easy steps; the brake does not have to be disassembled for this. The monitoring by sensors of the brake function (open/closed) and of the degree of brake pad wear are fur-



*Compact and light: The electromagnetic disc brakes
(Image: RINGSPANN)*

her features which simplify handling and improve the level of safety. "With Industry 4.0 applications in mind, our developers have also ensured that all sensor monitoring functions can be integrated very easily into machines' and plants' higher-level safety and control systems", underlines RINGSPANN divisional manager Franz Eisele.

With its extended selection of electric industrial disc brakes of the series EV and EH for clamping forces from 1.8 to 24 kN, RINGSPANN offers machine and plant engineers in many industries innovative brake technology in a modern design. Wherever reliable and sustainable holding and emergency stop systems need implementing at reasonable costs, these electrical brakes by RINGSPANN prove an ideal solution.

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High safety standard with minimum use of energy

The electronics of RINGSPANN's electrical industrial brakes work extremely reliably and ensure the functional operation of the brake. They have multiple voltage spike protection. Even in the event of such disturbances in the power supply, safe operation of the generously dimensioned switching transistors is ensured at all times. Drawing on their practical experience, RINGSPANN developers have also succeeded in lowering the necessary pull-in power of the latest brake generation by up to 20 percent. The magnetic circuit has been optimised based on modern FEM calculations. The result is an extremely compact combination of magnets and an optimal interaction of magnet and electronics.

*Dipl. Ing. Franz Eisele, Head of the Brakes and Cupplings Department: "Our electromagnetic brakes get by with an extremely low power consumption during the entire holding phase; just 10 Watts are required for the small sizes."
(Image: RINGSPANN)*

